

1 – PRODUCT IDENTIFICATION

COMPANY:CHEMTRON SUPPLY CORPORATION 3500 HARRY S. TRUMAN BLVD ST. CHARLES, MO 63301 (P) 636-940-5445 (MON-FRI 7:30-4:00) www.chemtroncorporation.com

2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Corrosive. Clear, colorless, basic liquid with an amine (ammonia) odor. Product is corrosive to eyes, skin, and respiratory system. Skin absorption, inhalation, or ingestion may also result in toxic effects. May react with acids. Container head space gases may be flammable if exposed to a source of ignition.

CLASSIFICATION 29 CFR 1910.1200: Product is hazardous by OSHA criteria.

PHYSICAL HAZARDS	: Flammab	Flammable Liquids: .		Category 3
HEALTH HAZARDS:	Acute To	Acute Toxcity, Oral: Acuty Toxicity, Dermal:		Category 4
	Acuty To			Category 4
	Skin Cor	rosion/irritation:	(Category 1
	Serious E	Eye Damage/eye irrita	tinon: C	Category 1
	Reproduc	ctive Toxicity:	(Category 2
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GHS SIGNAL WORD:.....**Danger**



PRECAUTIONARY STATEMENTS:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/surfaces. –No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Takek precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protectiving clothing/eye protection/face protection.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Take off all contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish.

Storage: Store in a well-ventillated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not othewise classfied (HNOC): None known. Supplemental Information: None.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	PERCENT	CAS NUMBER
Cyclohexylamine	20-40	108-91-8
Methyoxypropylamine	20-40	5332-73-0

*The exact percent by weight of the ingredients in this formulation is proprietary.

4 – FIRST-AID MEASURES

INHALATION:	If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.	
	If experiencing respiratory symptoms: Call a doctor.	
INGESTION:	If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately, call a poison control center or	
	doctor.	
EYES:	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and	
	easy to do. Continue rinsing for 15 minutes. Immediately, call a doctor.	
SKIN:	If on skin (or hair): Immediately, take off all contaminated clothing. Rinse skin with water. Use	
	safety shower if available. Immediately, call a doctor. Chemical burns may be treated by a	
	physician. Wash contaminated clothing before reuse.	
ACUTE/DELAYED SYMPTON	1S: Burning pain and sever corrosive skin damage. Causes serious eye damage. Symptoms may include stining, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.	
IMMEDIATE OR SPECIAL TREATMENT REQUIREMENTS: Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do no adhere		

Thermal burns: Flush with water immediately. While flushing, remove clothes which do no adher to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to



affected area. Continue flushing during transport to hospital. Keep victim warm. Keep victim
under observation. Symptoms may be delayed.GENERAL INFORMATION: Take off all contaminated clothing immediately. If exposed or concerned: Get medical
advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure
that medical personnel are aware of the material(s) involved, and take precautions to protect
themselve. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing
before reuse.

5 – FIRE-FIGHTING MEASURES

FLAMMABILITY:	
EXTINGUISHING MEDIA:	
	(CO2). Do NOT use water jet as an extinguisher, as this will spread the fire.
SPECIAL FIRE FIGHTING PR	OCEDURES:
	move containers away from fire. Cool fire exposed containers with water spray. If containers
	rupture or leak, product may evolve oxides of nitrogen and oxides of carbon.
GENERAL FIRE HAZARDS:	Flammable liquid and vapor.

6 – ACCIDENTAL RELEASE MEASURES

SPILL PROCEDURES:	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all	
CONTAINMENT/CLEANUP:	ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. .Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This product is miscible in water.	
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.	
	Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.	
ENVIRONMENTAL PRECAUT	TONS: Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses onto the ground.	
7 – HANDLING and STORAGE		
HANDLING:		



women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
 Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated

out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS:.....Exposure limits for the formulated product are not established. Exposure limits for hazardous ingredients are:

Ingredient	Туре	Exposure Limit
Cyclohexylamine (CAS: 108-91-8)	TWA	10 ppm
U.S. NIOSH:		
Ingredient	Туре	Exposure Limit
Ingredient Cyclohexylamine (CAS: 108-91-8)	Type TWA	Exposure Limit 40 mg/m3

BIOLOGICAL LIMIT VALUES: No biological exposure limits noted for the ingredient(s).

EXPOSURE GUIDELINES: US CALIFORNIA SKIN DESIGNATION:

A COLLI THEFEILOLD.

Cyclohexamine (CAS: 108-91-8)	Can be absorbed through skin.

APPROPRIATE ENGINEERING CONTROLS: Explosion-proof general and local exhaust ventilation. Good general ventilation		
should be used. Ventilation rates should be matched to conditions. If applicable, use process		
enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels		
below recommended exposure limits. If exposure limits have not been established, maintain		
airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available		
when handling this product.		

9 – PHYSICAL / CHEMICAL PROPERITES

protective equipment to remove contaminants.

material and before eating, drinking, and/or smoking. Routinely wash work clothing and

APPEARANCE:.....Clear, Colorless, Liquid



BOILING POINT:	 >212° F
VAPOR PRESSURE:	<1.0 mm Hg estimated
SPECIFIC GRAVITY:	Specific gravity, 0.98-0.99
рН:	
SOLUBILITY IN WATER:	
FLAMMABILITY CLASS:	
ODOR:	Amine odor
FLASH POINT	: ~124° F
EVAPORATION RATE:	Not available
MELTING POINT/FREEZING	POINT:
DENSITY:	8.17 lb/gal

10 – STABILITY and REACTIVITY

REACTIVITY: Product may react with strong acids and strong oxidizers.		
	table at ambient temperatures and pressures.	
HAZARDOUS POLYMERIZATION .: Polymerization will not occur.		
INCOMPATIBILITY:S	trong acids and strong oxidizers. Aluminum	
HAZARDOUS REACTIONS: C	Contact with strong acids and strong oxidizers. Avoid exposure to sources of ignition	
HAZARDOUS DECOMP.:C	Dxides of nitrogen and oxides of carbon.	
CONDITIONS TO AVOID:A	void ehat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the	
fl	lash point. Contact with incompatible materials. Do not mix with other chemicals.	

11 – TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE: Inhalation: May cause irritation to the respiratory system. Prolonged		
inhalation may be harmful. Skin Contact: Causes sever skin burns. Harmful contact with skin. Eye		
Contact: Causes serious eye damage. Ingestion: Causes digestive tract burns. Harmful if		
swallowed.		
TOXICOLOGICAL CHARACTERISTICS:		
Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye		
damage including blindness could result.		
ACUTE TOXICITY:		
LISTED CARCINOGEN:		
DELAYED EFFECTS:Dermatitis, pulmonary edema; chemical pneumonitis.		
IMMEDIATE EFFECTS: Irritation or burns to eyes, skin, upper respiratory system, or other tissues		
CHRONIC EFFECTS:		
sensitization. High dose exposure to cyclohexylamine has produced embryotoxicity, low birth		
count, post natal mortality, and decreased body weight in laboratory animals.		

REPRODUCTIVE TOXICITY: Suspected of damaging fertility or the unborn child.

INGREDIENT	DATA
Cyclohexylamine	Oral rat LD50 303 mg/kg (male rat)
	Dermal rabbit LD50 >631 mg / kg <1000 mg / kg
	Inhalation rat LC50 >32.9 mg / I (32.9 g/m3) 4 hour



12 – ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND DISTRIBUTION:. No ecotoxicity data available for the formulated product. Significant contamination of small bodies of surface water or localized areas at the point of a spill may elevate pH levels above tolerable levels for aquatic organisms. Hazardous ingredients listed in Section 3 are toxic to aquatic organisms. Note ingredient LC50's.

PRODUCT	DATA
5020	LC50 48hr Ceriodaphnia Dubia 102.49 mg/L
5020	LC50 96hr Fathead Minnow 201.58 mg/L

PERSISTENCE AND DEGRADABILITY: Not known. Amine ingredients are biodegradable Partition coefficient n-octanol/water (log Kow)

1.49

Cyclohexylamine

MOBILITY IN SOIL: Not known. Water solubility may enhance mobility in groundwater. OTHER ADVERSE EFFECTS:.....Not known.

13 – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:..... Product is consumed during recommended use. Flush container residues to the treated system. If product is not consumed in use, material is RCRA hazardous waste due to the corrosivity characteristic (D002) and the ignitable characteristic (D001). Dispose of contents or container in accordance with local, state, and federal regulations. The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.

14 – TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Corrosive liquids, flammable, n.o.s., (Cyclohexylamine) UN/NA NUMBER: UN2920





PACKAGING GROUP: PG II TRANSPORT IN BULK: Product container meets or exceeds DOT requirements. Material is a Packing Group II corrosive base. No extraordinary measures are required for shipment in bulk tanks including totes. See 49 CFR 172.101 & 49 CFR172.102. SPECIAL PRECAUTIONS: If needed, see Column 7 entries in the DOT hazardous materials table and associated designations at 49 CFR172.102 for detailed descriptions of authorized containers, tank material specifications, maximum degree of filling, minimum pressure tests, and other information.

15 - REGULATIONS

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200

EPA SRA Title III Chemical Listings:

TSCA STATUS:	All ingredients listed or exempt.
	Cyclohexylamine ingredient listed as an EPCRA Extremely hazardous substance, 40 CFR 355
	Appendix A
SECTION 304:	Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).
	This product does not contain any chemicals which are subject to the reporting requirements of the
	Act and Title 40 of the Code of Federal Regulations, Part 372.
SECTION 311/312:	Acute, chronic, fire
US EPA CERCLA:	If product is designated waste, substance is hazardous per the corrosivity characteristic (D002) and
	the ignitable characteristic (D001).

16 – OTHER INFORMATION

NFPA HAZARD RANKING :

HEALTH	FIRE	REACTIVITY	SPECIAL
3	2	0	CORR

HMIS HAZARD RANKING:

HEALTH	FIRE	REACTIVITY	PPE
3	2	0	n & p or X (HMIS III, defined below)

n - splash goggles

p - gloves

X - consult supervisor